

**0-1999ppm CO, 0-2.0% HYDROGEN, 0-23.5% OXYGEN
in NITROGEN****50009-HYDROGEN**Label 2.2 : Non
flammable, non toxic gas.**1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING**

Trade name : 0-1999ppm CO, 0-2.0% HYDROGEN, 0-23.5% OXYGEN in NITROGEN
MSDS Nr : 50009-HYDROGEN
Use : Calibration.
Company identification : Air Liquide Australia Limited
Level 9 / 380 St. Kilda Road
Melbourne VIC 3004 Australia
Tel: + 61 3 9697 9888
Fax: + 61 3 9690 7107
ALAEquiries@AirLiquide.com
Emergency phone nr : 1800 812 588

2 HAZARDS IDENTIFICATION

Hazard classification : Not classified as hazardous according to NOHSC criteria.
Classified as a dangerous good by the criteria of the ADG code.
Hazards identification : Compressed gas.
In high concentrations may cause asphyxiation.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Preparation : Preparation.
Components : This product is not hazardous but contains hazardous components.

Substance name	Contents	CAS No	EC No	Annex No	Classification
Carbon monoxide	< 0.2 %	630-08-0	211-128-3	006-001-00-2	F+; R12 Repr. Cat. 1; R61 T; R23-48/23
Hydrogen	<= 2 %	1333-74-0	215-605-7	001-001-00-9	F+; R12
Oxygen	< 23.5 %	7782-44-7	231-956-9	008-001-00-8	O; R8
Nitrogen	balance	7727-37-9	231-783-9	-----	

4 FIRST AID MEASURES

First aid measures
- Inhalation : In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation.
Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.

5 FIRE-FIGHTING MEASURES

Specific hazards : Exposure to fire may cause containers to rupture/explode.
Hazardous combustion products : None.
Extinguishing media

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- Suitable extinguishing media** : All known extinguishants can be used.
- Specific methods** : If possible, stop flow of product.
Move away from the container and cool with water from a protected position.
- Special protective equipment for fire fighters** : In confined space use self-contained breathing apparatus.

6 ACCIDENTAL RELEASE MEASURES

- Personal precautions** : Evacuate area.
Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.
Ensure adequate air ventilation.
- Environmental precautions** : Try to stop release.
- Clean up methods** : Ventilate area.

7 HANDLING AND STORAGE

- Storage** : Keep container below 50°C in a well ventilated place.
- Handling** : Suck back of water into the container must be prevented.
Do not allow backfeed into the container.
Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt.
Refer to supplier's container handling instructions.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

- Personal protection** : Ensure adequate ventilation.
- Occupational Exposure Limits** : Carbon monoxide : TLV[©] -TWA [ppm] : 25

9 PHYSICAL AND CHEMICAL PROPERTIES

- Physical state at 20 °C** : Gas.
- Colour** : Colourless gas.
- Odour** : No odour warning properties.
- Molecular weight** : 28
- Melting point [°C]** : -210
- Boiling point [°C]** : -196
- Critical temperature [°C]** : -147
- Vapour pressure [20°C]** : Not applicable.
- Relative density, gas (air=1)** : 0.97
- Relative density, liquid (water=1)** : Not applicable.
- Solubility in water [mg/l]** : 20

10 STABILITY AND REACTIVITY

- Stability and reactivity** : Stable under normal conditions.

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To atmosphere in a well ventilated place.
Contact supplier if guidance is required.**14 TRANSPORT INFORMATION**

UN No. : 1956
Labelling ADG : Label 2.2 : Non flammable, non toxic gas.
H.I. nr : 20
Proper shipping name : COMPRESSED GAS, N.O.S.
HAZCHEM - Emergency Action Code : 2TE
: 2 = *Fine water spray.*
: T = *Recommended personal protective equipment : Full fire kit and breathing apparatus.*
: *Appropriate measures : dilute.*
: *E = There may be a public safety hazard outside the immediate area of the incident, and that the following actions should be considered :*
: *1. People should be warned to stay indoors with all doors and windows closed, preferably in rooms upstairs and facing away from the incident. Ignition sources should be eliminated and any ventilation stopped.*
: *2. Effects may spread beyond the immediate vicinity. all non-essential personnel should be instructed to move at least 250 metres away from the incident.*
: *3. Police and fire brigade incident commanders should consult each other and with a product expert, or with a source of product expertise.*
: *4. The possible need for subsequent evacuation should be considered, but it should be remembered that in most cases it will be safer to remain in a building than to evacuate.*

- ADG Class : 2
- ADG Classification code : 1 A
Other transport information : Avoid transport on vehicles where the load space is not separated from the driver's compartment.
Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.
Before transporting product containers :
- Ensure that containers are firmly secured.
- Ensure cylinder valve is closed and not leaking.
- Ensure valve outlet cap nut or plug (where provided) is correctly fitted.
- Ensure valve protection device (where provided) is correctly fitted.
- Ensure there is adequate ventilation.
- Compliance with applicable regulations.

15 REGULATORY INFORMATION

EC Classification : Not included in Annex I.
Not classified as dangerous preparation/substance.
EC Labelling : No EC labelling required.
Symbol(s) : None.
R Phrase(s) : None.



MATERIAL SAFETY DATA SHEET

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Revised edition no : 1

Date : 3 / 8 / 2010

Supersedes : 0 / 0 / 0

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50009-HYDROGEN

15 REGULATORY INFORMATION (continued)

S Phrase(s) : None.

16 OTHER INFORMATION

Asphyxiant in high concentrations.

Keep container in a well-ventilated place.

Do not breathe the gas.

Ensure all national/local regulations are observed.

The hazard of asphyxiation is often overlooked and must be stressed during operator training.

This Safety Data Sheet has been established in accordance with the applicable European Directives and applies to all countries that have translated the Directives in their national laws.

DISCLAIMER OF LIABILITY

: Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

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